

# inSIGHT™ Data Monitoring







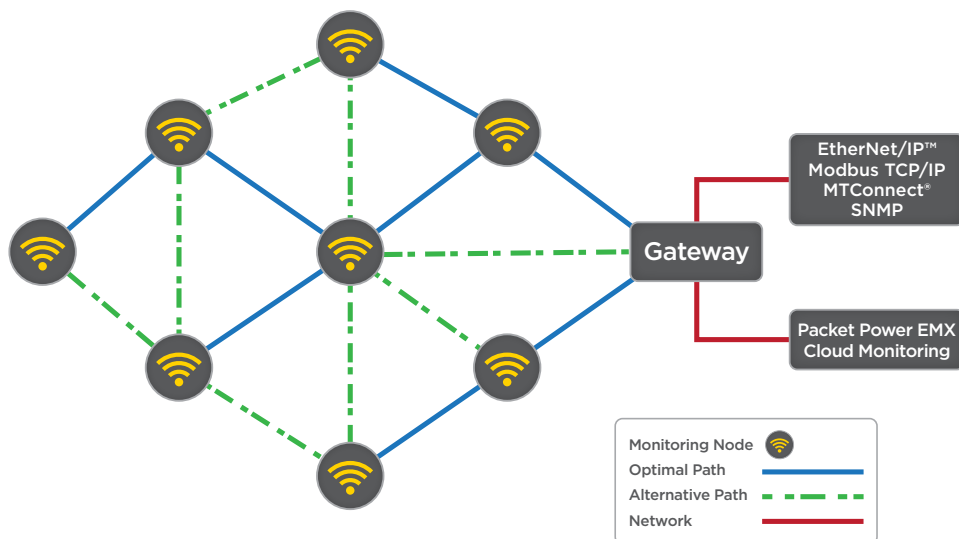
Data collection and analytics in today's markets are increasingly important to ensuring efficiency, uptime, and quality. For any industrial manufacturer or data center owner, the ability to predict costly downtime before it happens is critical to maintaining productivity.

Hubbell's line of intelligent Data Monitoring devices provide data directly at the point of use for analytics while helping to predict potential process changes. Important power and environmental data provided ranges from revenue grade billable metering, voltage, power, and internal device temperature.

Hubbell's Ethernet Gateway gathers data from all data monitoring devices and is the connection point from the wireless to the wired. Data received from all monitoring devices is transferred through a wireless mesh network to the gateway which is then sent to the user's front end dashboard for visual and historical analysis. Each gateway can accept up to 150 monitoring devices at a maximum distance of 30 meters from node to node. If there is a line of sight issue between nodes within the network, the device will transmit data to the next closest monitoring node.



Cloud-based or local software packages are available as part of the Hubbell system or any customer supplied data monitoring software can be used. Programmable data thresholds can be set to alert the user when outputs fall outside of the upper or lower parameters. If required, text or email alerts can be sent directly to the responsible designee.





Data monitoring is incorporated into standard IEC packaging, invisible to users, which allows this technology to be mated with the existing installed base. This system is easy to install and self-configures once powered up. Because of the mesh communication network, adding additional nodes is seamless; they automatically connect to the closest node, i.e. a gateway or device.

Utilizing both 860-930MHz and 2.46GHz operating frequencies, the communication of this system is separate from primary networks and can be encrypted if there are security concerns. Radio zones can be configured within the device and gateway to isolate networks from each other. This allows multiple mesh networks to operate independently without data crossing over from one network to the other.

Internal temperature is measured directly at the termination. Any changes to typical operating temperatures will prompt an immediate notification to the responsible party.

## Data Monitoring Pin and Sleeve Devices

Amps	Poles/Wires	AC Voltage	Device	Radio Zone 1	Radio Zone 2
60	3P/4W	3Ø 480V	Receptacle	<b>HBL460R7WDMUS1</b>	<b>HBL460R7WDMUS2</b>
			Connector	<b>HBL460C7WDMUS1</b>	<b>HBL460C7WDMUS2</b>
60	3P/4W	3Ø 250V	Receptacle	<b>HBL460R9WDMUS1</b>	<b>HBL460R9WDMUS2</b>
			Connector	<b>HBL460C9WDMUS1</b>	<b>HBL460C9WDMUS2</b>

## Technical Specifications

Measurement	Communications
Measurements	V, A, W, PF, Temp
Accuracy	+/- 1.0%
Voltage	250 - 480V AC
Current range	Up to 60A
Circuit types	Three phase
	Operating frequency
	Wireless protocol
	Wired network protocol
	Firmware updates
	Typical transmission range
	Antenna
	Monitoring unit to gateway ratio
	Gateways per site
	Multi-site support
	Encryption
	Compatible devices
	860 to 930 MHz and 2.4 GHz. Frequency varies by region
	Self configuring, load balancing mesh network
	Ethernet with various protocols available
	Wireless
	Up to 30 meters between any 2 devices in mesh network
	Fully enclosed
	Up to 150 monitoring units per gateway
	Unlimited
	Yes
	AES 128-bit
	All Hubbell monitoring units

**Wirelessly monitor and track critical performance indicators:**

- › **Current**
- › **Power**
- › **Voltage**
- › **Internal Device Temperature**
- › **Utility Grade Metering**
- › **Data trends**

Mates to IEC 60309 devices

UL witnessed IP69k and UL Type 4X and 12

Built to withstand wet and harsh environments



# Ethernet Gateways

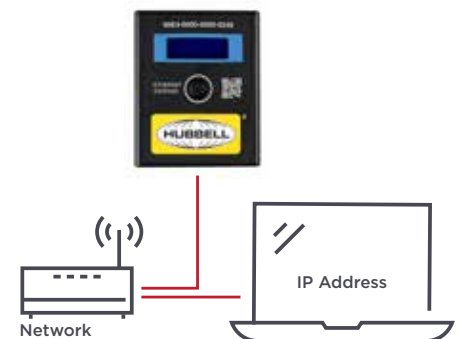


Hubbell's Ethernet Gateways gather data from all data monitoring devices and transfer it to the users front end dashboard for visual and historical analysis. Upper and lower thresholds will allow the system to immediately notify the designated contact when data is outside set parameters.

Hubbell's wireless mesh network allows for easy installation and implementation. This self-adaptive and self-communicative technology ensures all data is effectively transmitted back to the gateway, eliminating the need to run and connect cables throughout the facility. One hardwired homerun to a server is all that is required.

## Ethernet Gateways

Firmware	# of Nodes	Radio Zone 1	Radio Zone 2
EMX Gateway	30	HBLGW04000LUS1	HBLGW04000LUS2
	150	HBLGW04000EUS1	HBLGW04000EUS2
Modbus TCP/IP Gateway	30	HBLGW0400MLUS1	HBLGW0400MLUS2
	150	HBLGW0400MEUS1	HBLGW0400MEUS2
SNMP Gateway	30	HBLGW0400SLUS1	HBLGW0400SLUS2
	150	HBLGW0400SEUS1	HBLGW0400SEUS2
EtherNet/IP™ Gateway	30	HBLGW0400ELUS1	HBLGW0400ELUS2
	150	HBLGW0400EEUS1	HBLGW0400EEUS2
MTConnect® Gateway	30	HBLGW040MTLUS1	HBLGW040MTLUS2
	150	HBLGW040MTEUS1	HBLGW040MTEUS2



## Technical Specifications

Communications		Environmental & Mechanical	
Operating frequency	860 to 930 MHz and 2.4 GHz. Frequency varies by region	Operating temperature	32 to 104F (0 to 40C)
Wireless protocol	Self configuring, load balancing mesh network	Operating humidity	10 to 90% non-condensing
Wired network protocol	Ethernet with various protocols available	Environmental rating	NEMA enclosure type 1, indoor use
Firmware updates	Wireless	Mounting options	Din rail, screw, cable tie
Typical transmission range	Up to 30 meters between any 2 devices in mesh network	External power supply	100 to 240V AC input, 50/60 Hz (5V DC) output
Antenna	Fully enclosed	Plug types	C14, NEMA 5-15
Monitoring unit to gateway ratio	Up to 150 monitoring units per gateway	Power consumption	3W
Gateways per site	Unlimited	PoE (Power over Ethernet)	Requires an external PoE splitter
Multi-site support	Yes	Certifications	FCC, IC, CE
Encryption	AES 128-bit		
Compatible devices	All Hubbell monitoring units		
Local display	LCD for status and configuration. LED for general device status		





Hubbell's power monitoring cables provide quick plug and play monitoring directly at point of use: simply disconnect existing connection point and plug in the monitor assembly inline to the power feed. The pre-wired monitor transmits power usage directly to a central gateway without the need for complicated system configuration. Power cables are available in single and three phase amperage and voltage configurations typically found in industrial and data center facilities.

These power monitors transmit data to the gateway or other power nodes only, and are not able to be used as a disconnect or switch. **SG** series cables indicate single phase configuration, while **RG** series cables indicate three phase.

## Smart Power Cables

Description		Catalog Number
NEMA Smart Power Cable	Single Phase	20A, 120V AC
		20A, 250V AC
		30A, 250V AC
	3 Phase Wye	30A, 120/208V AC
Smart Power Cable	3 Phase	50A, 250V AC
IEC Smart Power Cable	3 Phase	30A 200/346-240/415V AC
		32A, -6h/200/346-240/415V AC



## Technical Specifications

Measurement	Communications		Environmental & Mechanical
Measurements	V, A, W, Wh, VA, Hz, PF	Operating frequency	860 to 930 MHz and 2.4 GHz. Frequency varies by region
Accuracy	+/- 1.0%	Wireless protocol	Self configuring, load balancing mesh network
Voltage	100 - 480V AC	Wired network protocol	Ethernet with various protocols available
Current range	Up to 100A	Firmware updates	Wireless
Circuit types	Single and three phase	Typical transmission range	Up to 30 meters between any 2 devices in mesh network
		Antenna	Fully enclosed
		Monitoring unit to gateway ratio	Up to 150 monitoring units per gateway
		Gateways per site	Unlimited
		Multi-site support	Yes
		Encryption	AES 128-bit
		Compatible devices	All Hubbell monitoring units
		Local display	LCD for status and configuration. LED for general device status
		Operating temperature	20 to 167F (7 to 75C)
		Operating humidity	5 to 95% non-condensing
		Environmental rating	Not rated
		Power consumption	.6W
		Certifications	FCC, IC, CE

# Circuit and Environmental Monitors



Hubbell's Circuit Monitors provide a means to monitor single and three phase circuits in preconfigured enclosure kits. These devices support 38–480 amp applications and connect automatically to Hubbell's self-configuring wireless mesh network. These systems allow for easy installation, with split core current transformers that can connect to existing circuits without the need to disconnect power. This real time monitor can provide insight into power consumption, load balancing, cost allocation, and historical trends.

Hubbell's Environmental Monitors can accommodate up to six external temperature probes up to 4 meters in length. Relative humidity sensing, internal to the device, is also available in this Hubbell model. These monitors communicate on the same wireless mesh network as other Hubbell power monitors, and communicate directly with the Hubbell gateway. Each gateway can accept data from up to 150 monitors.

## Circuit Monitors

Description			Catalog Number
Split Core Circuit Monitor	10MM Single Phase	38A, 240V AC	<b>HBLPG003S00010MM</b>
		63A, 240V AC	<b>HBLPG006S00010MM</b>
	16MM 3 Phase Delta	120A, 240V AC	<b>HBLPG010D00016MM</b>
	24MM 3 Phase Wye	240A, 120/208V-240/415V AC	<b>HBLPG020Y00024MM</b>
	36MM 3 Phase Delta	480A, 240V AC	<b>HBLPG040D00036MM</b>



## Environmental Monitors

Description		Catalog Number
Environmental Monitor		<b>HBLE306H000</b>
Temperature Probe	1 meter	<b>HBLTPP3001M</b>
	2 meters	<b>HBLTPP3002M</b>
	3 meters	<b>HBLTPP3003M</b>
	4 meters	<b>HBLTPP3004M</b>



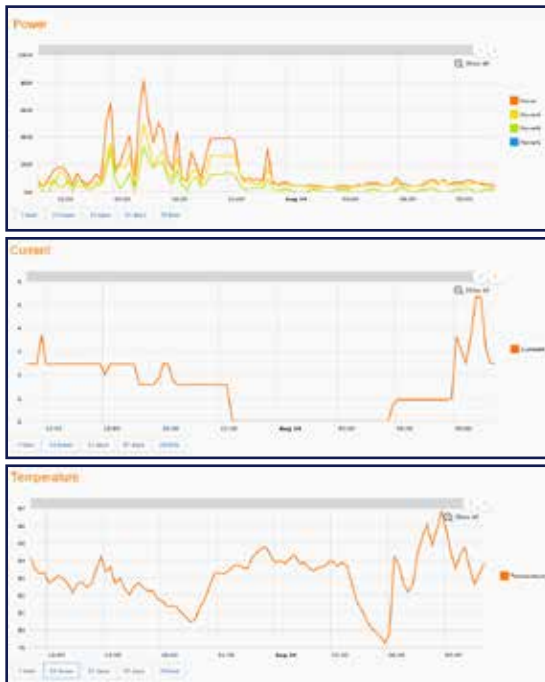
\*For technical specifications, please refer to the product's user guide.



### Compatible Industrial Protocols

EMX      MTConnect®  
 EtherNet/IP™      SNMP  
 Modbus TCP/IP

Software packages are available upon request, or any customer supplied BMS or DCIM software can be used. Full SNMP and Modbus TCP/IP communication is provided by the gateway. Cloud-based service or local software options are available. Programmable data thresholds can be preconfigured to alert users when outputs fall outside of range parameters. Text or email alerts can be sent directly to the designated contact.



*Dashboard displays data sent by the device through the gateway. This example shows one phase of the connector heating up.*

*Historical data is stored in the software and can be viewed by varying time intervals, such as by month, day or hour. This gives the customer insight to what the power demand, temperature and current have been, and if they have changed over time.*



## Online Resources

The Hubbell Wiring Device-Kellems website offers fast and convenient information through our online catalog, technical support, videos and more. Visit [www.hubbell.com/wiringdevice-kellems/en](http://www.hubbell.com/wiringdevice-kellems/en).

## Literature Support

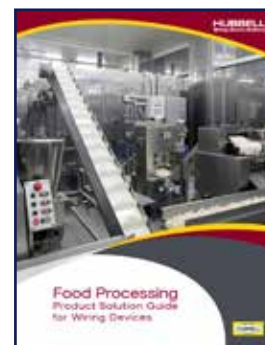
Hubbell offers an extensive literature library for product support. Downloadable PDFs are available online.



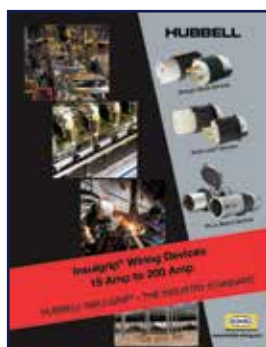
The Hubbell Wiring Device-Kellems catalog showcases an enhanced product offering to provide a breadth of solutions for industrial, commercial and residential markets.



The Best Pin & Sleeve Just Got Better! Hubbell's redesigned IEC 60309 Pin & Sleeve devices boast even more new features, functions and benefits including Type 4X, 12 & IP69k, and industry-leading HP ratings.



Hubbell's food processing guide identifies product solutions for areas where water, corrosiveness, harsh temperatures and personal protection are required.



Comprehensive showcase of Hubbell Insulgrip products, including straight blade, Twist-Lock® Safety Shroud, and pin and sleeve wiring devices.



Hubbell's user manual links direct customers to electronic support files, such as installation guides.